

Listing of Claims

Claims 1-18 (canceled).

19. A method for processing a spectral signal to predict sugar content of an agricultural product, comprising:

receiving a light signal from an agricultural product;

converting the light signal into a spectral signal;

digitizing the spectral signal to produce a plurality of data points; and

processing the data points using dark signal values and a reference signal value to produce a plurality of normalized data points, the normalized data points having values related to sugar content of the agricultural product, and wherein the reference signal value is related to a magnitude at one or more wavelengths of the spectral signal.

20. The method of claim 19 wherein the processing step includes using as the reference signal value an original or a derived magnitude at one or more wavelengths of the spectral signal.

21. The method of claim 19 wherein the receiving step includes receiving the light signal reflected from the agricultural product.

22. The method of claim 19, further including reducing the plurality of normalized data points.

23. The method of claim 19 wherein the processing step includes using as the reference signal value a value related to original or derived magnitudes at a plurality of wavelengths of the spectral signal.

24. The method of claim 19 wherein the processing step includes using as the reference signal value an average magnitude value of a range of magnitude values within a pair of wavelengths centered around a reference wavelength.
25. The method of claim 19 wherein the processing step includes using, as the reference signal value, a value derived from a set of the data points using a mathematical function.
26. The method of claim 19, further including predicting sugar content of the agricultural product using the plurality of normalized data points.
27. The method of claim 26, further including:
- receiving geographical coordinates corresponding with a geographical location of the agricultural product; and
 - associating the geographical coordinates with the predicted sugar content of the agricultural product.
28. The method of claim 19, further including:
- receiving a plurality of geographical coordinates corresponding with geographical locations of a plurality of agricultural products for which sugar contents are predicted using the method; and
 - associating the plurality of geographical coordinates with the predicted sugar contents of the plurality of agricultural products.
29. The method of claim 28, further including generating a map of the sugar contents of the agricultural products using the plurality of geographical coordinates and the associated predicted sugar contents.

30. The method of claim 29 wherein the generating step includes generating a grid map.

31. The method of claim 29 wherein the generating step includes generating a contour map.

32. A method for processing a spectral signal to predict sugar content of an agricultural product, comprising:

receiving a light signal from an agricultural product;

converting the light signal into a spectral signal;

digitizing the spectral signal to produce a plurality of data points; and

processing the data points using dark signal values and a reference signal value,

eliminating the use of a spectral signature of a separate physical standard, to produce a

plurality of normalized data points, the normalized data points having values related to sugar content of the agricultural product.

Claims 33-40 (canceled).